

UNCLASSIFIED

AD NUMBER

AD393389

CLASSIFICATION CHANGES

TO: unclassified

FROM: confidential

LIMITATION CHANGES

TO:

Approved for public release, distribution
unlimited

FROM:

DoD Controlling Organization: Department
of the Army, Office of the Adjutant
General, Washington, DC 20310.

AUTHORITY

6 Feb 1979 per DoDD 5200.10 document
marking; Adjutant General's Office [Army]
ltr dtd 29 Apr 1980

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FEB 12 1967

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ORAL FILE VOL 1

HEADQUARTERS, 10TH COMBAT AVIATION BATTALION
AID 96389

AD3933389

(12) 51p.

OPERATIONAL REPORT LESSONS LEARNED

(1) Operational rpt. for quarterly period ending 31 Jan 67.

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(18) OACSFOR (19) 07-RD-670030

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OCT 31 1968

DATE: 12/1/80 AT 5 YEAR INTERVALS;
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EOD DIR 5200.10

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DEPARTMENT OF THE ARMY
HEADQUARTERS 10TH COMBAT AVIATION BATTALION
APO 96377

AVGD-AE

6 February 1967

SUBJECT: Operational Report for Quarterly Period Ending 31 January 1967,
Report Control Symbol CSFOR-65 (U)

TO: See Distribution

SECTION I

1. (C) GENERAL

a. MISSION: The 10th Combat Aviation Battalion provides aviation support as directed by CO, 17th Combat Aviation Group, to US Forces, Republic of Vietnam Armed Forces (RVNAF) and Free World Military Assistance Forces (FWMAF), in developing and maintaining an effective conventional and counter-insurgency capability; to exercise command and control over assigned and attached units as directed by CO, 17th Combat Aviation Group.

b. ORGANIZATION: The 10th Combat Aviation was organized as follows on 31 January 1967:

(1) Headquarters and Headquarters Company

256th Signal Detachment
279th Signal Detachment
296th Signal Detachment
238th Counter-Mortar Radar Detachment

(2) 48th Assault Helicopter Company (UH-1)(A)

390th Transportation Detachment (CHFM)
286th Medical Detachment

(3) 117th Assault Helicopter Company (UH-1)(A)

140th Transportation Detachment (CHFM)
130th Medical Detachment

(4) 129th Assault Helicopter Company (UH-1)(A)

394th Transportation Detachment (CHFM)
433rd Medical Detachment

(5) 281st Assault Helicopter Company (UH-1)(A)

GROUP-1

Downgraded at 3 year intervals:
Declassified after 12 years.

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483rd Transportation Detachment (CHEM)
499th Signal Detachment

(6) 180th Assault Support Helicopter Company (CH-47)

403rd Transportation Detachment (PMAB)

c. COMMAND RELATIONSHIP

(1) The 10th Combat Aviation Battalion has been commanded by LTC B. L. Harrison since 12 July 1966. The Deputy Battalion Commander for Support and Deputy Battalion Commander for Operations are LTC Henry J. Wilkins, Artillery and Major Harry McRoper Jr, Engineer respectively. All positions above have remained unchanged since the last report.

(2) There were no changes in command of major subordinate elements during the reporting period.

d. ORGANIZATIONAL CHANGES:

(1) The 180th Assault Support Helicopter Company (CH-47) main body (minus equipment) arrived at Dong Ba Thin on 17 October 1966. (reported in last ORLL). Aviators assigned to this company were immediately assigned TDY to the 1st Cavalry Division and the 52d Combat Aviation Battalion in order to obtain field experience in operation of the CH-47 helicopters which would facilitate an early operational date for the 180th Assault Support Helicopter Company upon arrival of organic equipment. The 180th Assault Support Helicopter Company was declared operational on 1 December 1966.

(2) Assault helicopter companies were reorganized on 11 November 1966 under MTOE 1-77G, Headquarters, USARPAC.

2. (C) INTELLIGENCE

a. In the Dong Ba Thin area the physical security officer (S-2) has established a system for exchanging and coordinating intelligence information with all agencies in the area. The heart of the system is a meeting conducted daily at 1600 hours with representatives from all agencies attending. These agencies include the local Provincial Authorities, Republic of Vietnam Army and Republic of Korea Army forces stationed in the area, Special Forces Detachment B/51, and security representatives from Cam Ranh Bay. These daily meetings have significantly improved the intelligence picture of enemy activities in the Dong Ba Thin area.

b. In the forward area of operations intelligence information is obtained primarily from the supported units (1st Brigade, 101st Airborne Division and 1st Brigade, 4th Infantry Division) by way of INTSUM and close liaison. Representative from the battalion (most often the battalion commander) attend the daily staff briefings conducted in the Brigade Headquarters where a current intelligence picture is always presented. Due to the reliance of the supported units on helicopter support in their operations, ground unit commanders are

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extremely conscious of obstacles to all potential landing zones in their areas of operation and are quick to report such things as anti-helicopter stakes erected by the enemy.

c. In addition to the sources above assigned aviators are required to report all enemy activities observed by crewmembers and these reports continue to be timely and have a high validity rating.

3. (C) OPERATIONS AND TRAINING ACTIVITIES

a. PLANS:

At the close of the period the 10th Combat Aviation Battalion remained in a field location in the vicinity of Phan Thiet with three assault helicopter companies, and one assault support helicopter company, reinforced by the 17th Assault Helicopter Company and ten UH-1D's and two UH-1B(A) from the 1st Cavalry Division preparing to provide general support to the 1st Brigade, 101st Airborne Division on a mission currently classified TOP SECRET. All elements are operating per normal SOP with absolutely minimum essential equipment and are prepared to move on order and conduct a combat assault into an area of operation that is approximately 90 kilometers distance from Phan Thiet. The classification of the mission precludes further discussion at this time. Further details will be reported in the next quarterly ORL. The 281st Assault Helicopter Company with headquarters in Nha Trang continues to provide direct support to 5th Special Forces Group (Abn) and remains under operational control of the 5th Special Forces Group (Abn).

b. OPERATIONS:

(1) GENERAL. During the reporting period the 10th Combat Aviation Battalion was committed to support three major combat operations (Operation GERONIMO 1 31 Oct - 4 Dec 66, Operation PICKETT 9 Dec 66 - 18 Jan 67, and Operation FARRAGUT 26 Jan - continues). Other major operation supported by the battalion include Operation ADAMS still in progress with one assault helicopter company until 31 January 1967. During the reporting period the battalion reinforced the 14th Combat Aviation Battalion and the 52d Combat Aviation Battalion with elements of assault helicopter companies. The following units were supported during the period 1 November 1966 - 31 January 1967: 1st Brigade, 101st Airborne Division; 1st and 2d Brigades, 4th Infantry Division; 9th ROK Infantry Division, Capital ROK Infantry Division, 5th Special Forces Group, and II Corps and Army Vietnam troops (ARVN). Significant activities during the period include: The conduct of one battalion size night combat assault; one battalion size night extraction; three aviation battalion movements of 205, 285, and 165 kilometers respectively; and the return of the battalion to its rear base at Dong Ba Thin after one year and ten continuous days of operation in field locations throughout the II Corps area. On 5 December the 10th Combat Aviation Battalion displaced from field locations in the vicinity of Tuy Hoa to field location in the vicinity of Kontum. In addition to organic aircraft C-130 sorties were used to move equipment and personnel (including maintenance detachments) over a period of eleven days.

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It is noteworthy to point out that no delays were encountered with the movement of the assault helicopter companies and the battalion command and control elements. Delays encountered by a maintenance detachment were the result of higher priorities on available transportation by the 1st Brigade, 101st Airborne Division which was displacing at the same time and the incorrect transportation requirement request submitted by the maintenance detachments. These requirements have since been corrected and no difficulties were encountered on subsequent movements. On 19 January 1967 the 10th Combat Aviation Battalion displaced from field locations in vicinity of Kontum to its rear base in Dong Ba Thin. As stated above, it was the first time in more than a year that the battalion with its command and control elements operated from a place other than a field location. The movement involved a displacement of the 140th Maintenance Detachment by road convoy from Kontum to Qui Nhon and by LST from Qui Nhon to Cam Ranh Bay. Further road convoy was necessary to travel the short distance to Dong Ba Thin. The remainder of the battalion displaced to Dong Ba Thin through use of organic aircraft and twenty-eight C-130 sorties. The move was completed without incident and no major problems were encountered. Operation of the battalion command and control elements from Dong Ba Thin was short lived and on 24 January 1967 a forward command post was established and operating at Phan Rang near the headquarters of 1st Brigade, 101st Airborne Division. Location of the forward CP facilitated the planning and preparation necessary for Operation FARRAGUT. During this period and until 31 January subordinate elements which were to participate in Operation FARRAGUT (117th and 129th Assault Helicopter Companies, and the 180th Assault Support Helicopter Company) remained at Dong Ba Thin. Following a combat assault on 27 January with two Infantry Battalions and two Artillery batteries and subsequent support for three days, the 10th Combat Aviation Battalion on 30 January was ordered to displace on 31 January to Phan Thiet and to conduct a combat assault on 1 February in an area of operations 90 kilometers northwest of Phan Thiet. On 31 January the 48th Assault Helicopter Company displaced from Tuy Hoa to Phan Thiet via organic transportation and two CH-47's, closing at the new location at 1500 hours. The 117th and 129th Assault Helicopter Companies displaced from Dong Ba Thin on 31 January closing Phan Thiet at 1930 hours. The 180th Assault Support Helicopter Company closed at 0700 hours 1 February.

(2) OPERATION GERONIMO I (31 October - 4 December 1966)

(a) The task organization of the 10th Combat Aviation Battalion during operation GERONIMO I was as follows:

1. Command and control element, Headquarters, 10th Combat Aviation Battalion.
2. 48th Assault Helicopter Company (A)
3. 129th Assault Helicopter Company (A)
4. Detachment 174th Assault Helicopter Company (A)
5. Detachment 179th Assault Support Helicopter Company.

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6. Pathfinder Detachment 10th Combat Aviation Battalion

(b) The mission of the 10th Combat Aviation Battalion was to:

1. Provide general support to the 1st Brigade, 101st Airborne Division, 1st Brigade, 4th Infantry Division and the 47th ARVN Regiment.

2. Be prepared to mass aviation support as directed by CG, 1st Field Forces, Vietnam.

(c) The operations and accomplishments of the 10th Combat Aviation Battalion and attached CH-47's during Operation GERRONIMO are reflected in the following statistics:

1. Flight Data

UNIT	TROOPS	CARGO (TONS)	SORTIES	TIME (HRS)
48th AHC	10,999	663.1	7,121	2,563.7
129th AHC	13,503	435.1	7,958	2,513.1
174th AHC	861	81.4	1,631	198.1
179th ASHC	4,423	1,355.3	1,091	341.0
Total	29,786	2,534.9	17,729	5,615.9

2. Combat Assaults: US NON US

a. Platoon size	9	
b. Company size	21	3
c. Battalion size	4	

3. Combat Extractions: US NON US

a. Platoon size	6	
b. Company size	15	1
c. Battalion size	4	

4. Ammunition Expended

7.62mm	2.75"	40mm
297,040	1,767	5,652

5. Hours flown night

a. 48th AHC (A)	210.1
b. 129th AHC (A)	100.3
c. 174th AHC (A)	12.9

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d. 179th ASHC 25.6
Total 348.9

6. Anti-Aircraft Fire:

a. Number of aircraft receiving fire	17
b. Number of aircraft receiving hits	4
c. WIA	2
d. KIA	0

(d) Discussion of Operations.

1. Operation GERONIMO was commenced with a battalion size night non-illuminated combat assault. The operation was thoroughly planned and executed with no major problems encountered. The operation was considered a complete success. Night combat assaults can be conducted with the same degree of success provided certain conditions exist. Weather is a key factor and plays an important role in the success of night operations. The size of the landing zone should be larger than those selected for day operations. During the planning phase for night operations greater emphasis must be placed upon route selection to minimize the problem of enroute navigation. Navigational aids must be employed to assist the pilots in locating the route and the landing zone. During a night operation conducted previously arrangements were made with the Special Forces Detachment Commander at Cung Son to light the "flaming arrow" which is normally used to direct support aircraft at night during attacks by the enemy. In this case it was pointed in the direction of the landing zone and was very effective as a navigational aid. Other aids that can be used are "fuzee flares" placed at selected points along the flight route. Pathfinders on the landing zone provide the terminal guidance and prepare the landing zones with position lights for the helicopter. Consideration should be given to conducting deceptive night operations prior to the conduct of the actual assault. This provides an opportunity to the aviation unit to train their crews and deceives the enemy as to the actual area of intended operation. It is important that the aviation unit be given adequate time to plan night operations.

2. The heavy monsoon rains caused many missions to be delayed or rerouted. Heavy rains, low ceilings, fog, and frequent high winds demand a more careful plan of action and tests the skill of the most experienced pilots. The 10th Combat Aviation Battalion provided continuous support throughout the operation under very adverse weather conditions.

(e) Lessons Learned.

1. Adherence to release times assigned to mission aircraft must be emphasized. Aircraft generally are scheduled for missions based on anticipated amount of flying time during the mission. Scheduled maintenance

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is programed on the basis of anticipated flying hours. When aircraft continually overfly the programmed or anticipated time and arrive back in the company area after the hour of darkness, the results are an overload on maintenance crews, reduced availability of aircraft and the increased probability of maintenance error due to reduced lighting conditions. One hour of daylight maintenance is often worth several hours of maintenance effort under restricted lighting conditions.

2. Forward refueling points and ammunition supply points continue to be a necessity when covering a large area of operations. Problems involved include the increased possibility of contaminated fuel due to storage and transportation facilities. This problem can be minimized with proper supervision. Congestion at refueling areas can be reduced by positive radio control of aircraft needing fuel.

3. On three occasions the main rotor blades of operating helicopters struck ground vehicle antennas when the vehicle was driven too close to the helicopter. It is essential that all vehicle operators be cautioned and reminded of the dangers in operation around helicopters. Helicopter crew members must also be alert and halt vehicles when they approach the helicopter.

4. When planning a staging area for helicopter operations primary consideration must be given to helicopter parking and refueling areas prior to stock piling rations, ammunition, and equipment in preparation for an airmobile assault. On one occasion, refueling facilities, ration breakdown, and a medical aid station were all crowded into a very small area when the amount of space available was relatively unlimited. The congestion resulted in delayed loading and extended the time required to accomplish the mission by two hours.

5. When a unit is scheduled for extraction from a field location it is imperative that they select an area large enough to accommodate several helicopters. When a small area with obstacles surrounding the landing zone is used the time to accomplish the mission is extended disproportionately and results in inefficient aircraft utilization, particularly if long distances are involved. When it is impossible for a unit to move to a suitable pick-up site then consideration should be given to helilifting the troops from the undesirable LZ to an intermediate LZ in order to assemble the troops so that adequate loads can be carried for the greater distance. (See lessons learned: Operation PICKETT para (3)(d)3.)

6. With the limited number of aircraft available it is often necessary to commit aircraft on standby reaction force alert to other missions. Communication is the key to success in reforming the reaction force in minimum time should the requirement arise. The aircraft can and should be assigned other missions in the local area, however, the crews must be well briefed on the importance of returning to a predesignated landing site on order. Centralized control must be maintained over the reaction force and their commitment to other missions and this agency must be in communication with the pilots at all times.

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(3) OPERATION PICKETT (9 December 1966 - 18 January 1967)

(a) The task organization of the 10th Combat Aviation Battalion during Operation PICKETT was as follows:

1. Command and control element, Headquarters, 10th Combat Aviation Battalion.

2. 117th Assault Helicopter Company (A)

3. 129th Assault Helicopter Company (A)

4. 180th Assault Support Helicopter Company

5. Detachment 179th Assault Support Helicopter Company

6. Pathfinder Detachment, 10th Combat Aviation Battalion.

(b) The mission of the 10th Combat Aviation Battalion was to:

1. Provide general support to the 1st Brigade, 101st Airborne Division.

2. Be prepared to mass aviation support as directed by CG, 1st Field Forces, Vietnam.

(c) The operation and accomplishments of the 10th Combat Aviation Battalion and attached CH-47 aircraft during Operation PICKETT are reflected in the following statistics:

1. Flight Data - US Support.

UNIT	TROOPS	CARGO (TONS)	SORTIES	TIME (HRS)
117th AHC	7,654	200.2	7,169	2,340.2
129th AHC	7,499	226.2	6,399	2,357.1
179th ASHC	3,568	911.8	866	328.1
180th ASHC	1,506	229.0	262	104.2
Total	20,227	1,567.2	14,696	5,129.6

2. Flight Data - Non-US Support

UNIT	TROOPS	CARGO (TONS)	SORTIES	TIME (HRS)
117th AHC	1,949	29.2	1,410	438.8
129th AHC	3,448	11.0	517	415.8
179th ASHC	751	69.1	83	25.1
Total	6,148	109.3	2,010	879.1

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3. Combat Assaults:

	US	NON-US
a. Platoon size	8	4
b. Company size	2	12
c. Battalion size	14	4

4. Extractions:

	US	NON-US
a. Platoon size	8	3
b. Company size	7	10
c. Battalion size	16	1

5. Ammunition Expended:

7.62mm	2.75"	40mm
295,895	1,477	1,963

6. Hours flown night:

a. 112th AHC (A)	94.8
b. 129th AHC (A)	121.9
c. 179th ASHC	-
d. 180th ASHC	-
Total	216.7

7. Anti-aircraft Fire:

a. Number of aircraft receiving fire	15
b. Number of aircraft receiving hits	5
c. WIA	2
d. KIA	1

(d) Discussion of Operations.

1. The area of operation for Operation PICKETT extended through an arc approximately 40 kilometers southwest of Kontum to a similar distance northeast of Kontum with Kontum established as the base of operation. The area is characterized with high mountains and dense jungle growth. Bamboo is prevalent throughout the region. Surface winds at the rear base were a constant 15 knots with gusts to 25 knots from the east. In the mountains winds of 50 knots produced severe turbulence which was encountered daily in the area north of Kontum.

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2. Suitable landing zones were rare and in many instances nonexistent. During operations in the Cambodian border area west of Kontum the 105th Combat Aviation Battalion often encountered difficulty in locating adequate landing zones to complement the ground tactical plan. The lack of landing zones was further complicated by intelligence reports that several NVA units in the area had the mission of ambushing the most likely LZ's to be used by heliborne forces. Thus, the best available LZ's were often not considered suitable. Furthermore, in order to preserve the clandestine nature of the operation as long as possible, reconnaissance flights were few and made from at least a 2000 foot altitude, increasing the difficulties of LZ selection. Several experiments were conducted in the explosive clearing of LZ's during this period. Two principal methods were tried one of which involved using bangalore torpedoes to clear marginal LZ's in bamboo/elephant grass thickets. The second technique involved the sling loading of a specially prepared armed demolition charge into an area of bamboo and detonating it. This method provides a clean area similar to the results of a large (750-1000 lbs.) sensitive fused aerial bomb with the important advantage of exact placement. The bangalore method was actually used in combat to successfully land two infantry battalions adjacent to the Cambodian border. The sling loaded demolition charge was not utilized in an actual situation, but primarily due to a lack of requirement after its development and testing. (It was developed later in the operation) Details of these explosive clearing methods are found in Inclosure 1. They should be useful for other aviation units operating in areas of deep bamboo/elephant grass and represent an effective means of gaining additional flexibility in airmobile operations.

3. In Operation GERONIMO it was discovered that more efficient utilization of aircraft might be obtained if during extraction of troops from small and distant LZ's an intermediate assembly area could be established in order to create adequate loads for helicopters over the greater distance to the rear base. The opportunity to test this concept arose during Operation PICKETT when two infantry battalions were extracted from one and two ship LZ's and returned to their base of operations 45 kilometers away. The operation was conducted using 16 UH-1D's to conduct the extraction and transport the troops over a short distance into two martialing areas that were secured by combat assault. Here the troops were picked up by 4 CH-47's and moved approximately 40 kilometers to their home base in Kontum. This operation was completed within four and one-half hours under very adverse terrain and wind conditions.

(e) Lessons Learned.

1. Many of the LZ's and PZ's used were hastily prepared by ground units by cutting the trees and dense undergrowth with powersaws and machettes. Without exception, stumps of up to 1½ and 2 feet in height were left standing in the helicopter landing area. The hazards created by these stumps are two-fold: (1) a stump can easily puncture the bottom of the helicopter and rupture fuel cells or other vital parts and (2) the helicopter

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when hovering in rough air and oscillating back and forth can easily hang up on a stump and pitch over with disastrous results for the crew and personnel on the ground. As a result the LZ's were inspected carefully by the mission commander prior to commencement of the operation.

2. Difficulty was experienced with people who jump from the helicopter before the skids have touched the ground. It is important to recognize that the helicopter is in a critical position just prior to touch-down and it is essential for it to be in a level position before the skids touch the surface. When someone unexpectedly jumps from the aircraft, the sudden loss of weight creates a serious imbalance in the aircraft with a resultant dip on the opposite side accompanied by a sideward movement of the helicopter. A very dangerous condition is instantly created with the aircraft committed to land but not in a level attitude required to safely do so. At best a safe recovery from this occurrence will be several severe oscillations of the helicopter at a high hover while the pilot regains control and a delay of 5-10 seconds of precious time. If the LZ is small the helicopter main rotor blades may strike nearby trees and shrubs and ultimately result in destruction of the helicopter and injury or death to personnel. Critiques and review of helicopter operations with new personnel in the supported units has minimized this difficulty on subsequent operations.

3. Formerly helicopter operations have been plagued with loose objects scattered over the landing zones. Such items as tents and ponchos have occasionally ended up in a helicopter tail or main rotor. There has been a significant improvement in this area during Operation PICKETT and ground unit commanders were commended for their efforts to keep the LZ's and PZ's clear of debris.

4. During the time that units are being extracted, troops are normally coiled in a defensive formation around the pick-up zones. While covering the troop carrier aircraft making the extractions the gunships must be prepared to fire on targets of opportunity with minimum time lost in coordinating with ground unit commanders. During this operation ground unit commanders provided the aviation units with a fire coordination-line around the PZ beyond which the gunships were free to fire with minimum coordination required.

(4) OPERATION FARRAGUT (26 January 1967 - continues)

(a) The task organization of the 10th Combat Aviation Battalion at the beginning of Operation FARRAGUT is as follows:

1. Command and control element, Headquarters, 10th Combat Aviation Battalion.
2. 117th Assault Helicopter Company (A)
3. 129th Assault Helicopter Company (A)

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4. 180th Assault Support Helicopter Company

5. Pathfinder Detachment, 10th Combat Aviation Battalion

(1) The mission of the 10th Combat Aviation Battalion is to:

1. Provide general support to the 1st Brigade, 101st Airborne Division.
2. Be prepared to mass aviation support as directed by CG, 1st Field Forces, Vietnam.

(c) Operation FARRAGUT is still in progress. Statistics accumulated on this operation will be reported in the next reporting period.

(5) Operations of the 281st Assault Helicopter Company (UH-1)(A)

(a) The 281st Assault Helicopter Company continued to provide airlift support to the 5th Special Forces Group (Abn) as its primary mission. This support was manifested by continuous support to the lettered companies and Headquarters, 5th Special Forces Group (Abn) and periodic support to the MACV Recondo School and Detachment B-52 (Special operations).

(b) The company remains under the operational control of 5th Special Forces Group (Abn).

(c) Aircraft from the company are located throughout the area of I, II, III, and IV Corps tactical zones.

(d) Operations.

During the quarter, the 281st Assault Helicopter Company provided an average of six (6) UH-1D trooplift helicopters and four (4) UH-1C armed helicopters to support B-52 in long range reconnaissance patrol (LRRP) operations, during the periods 14 October 1966 through 18 November 1966 and 23 November 1966 through 25 December 1966. Armed helicopter support was furnished "D" Company 5th Special Forces Group (Abn) during the period 7 January 1967 through 20 January 1967. A summary of these operations is contained below:

1. Khe Sahn (14 October - 18 November and 28 November - 25 December 1966)

a. The Army Aviation support for Detachment B-52, 5th Special Forces Group (Abn) was provided by the 281st Assault Helicopter Company (A). The operation at Khe Sahn, RVN was accomplished in two (2) phases. Phase one was 14 October 1966 through 18 November 1966. Phase two was 28 November 1966 through 25 December 1966.

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Total hours flown	704.5
Tasks	463
Sorties	717
Troops lifted	1,373
Cargo (tons)	67.6
Aircraft hit by enemy fire	7
Aircraft lost	1
Aviation casualties	4 KIA

b. Discussion.

Initially on Phase I, insufficient area was provided for the security of the aircraft at Khe Sahn. An attempt was made to support the activities from Dong Ha but weather, communications and distance made it impractical. Security of the aircraft was accomplished by utilizing part of the Ranger Battalion for a perimeter. Also with the active patrolling accomplished by the Marines and the "A" Camp it was felt that the area was secure. There were no incidents during the entire operation.

During Phase II the weather seriously hampered the aviation support. However, this was due mainly to the increase in Ranger operations. On two occasions the entire Ranger Battalion was employed, and all other Ranger operations were company size units.

2. Other Operations.

a. Armed helicopter support of Airboat Operations - In the delta region during the flood season it was found that armed helicopter support of Airboat operations provided a hard hitting, fast moving team. Attached as inclosure 2 is a suggested SOP for this type operation.

b. Evaluation of Mini Gun (SUU-11A/A system) - This system was obtained as an in-leu-of item until the XM-21 system is received by this unit. Technical data and evaluation is contained as inclosure 3.

c. Plug in type Hoists - Two hoists were received by this unit in December 1966. To date, the hoist has been used on one operation in the infiltration and exfiltration of a recovery team that recovered four (4) bodies. A thorough evaluation of this system will be included on the next quarterly ORLL.

(6) Other Combat/Combat Support Operations.

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(a) The 10th Combat Aviation Battalion was committed to combat operations every day of the reporting period.

(b) In addition to the major tactical operations listed above, elements of the 10th Combat Aviation Battalion supported the following major operations:

1. OPERATION PAUL REVERE IV (1 Nov 66 - 9 Dec 66)

This operation was supported by the 117th Assault Helicopter Company. The following tasks were completed successfully:

- a. Total flying hours 2794.7
- b. Sorties 7,821
- c. Troops lifted 7,685
- d. Cargo (tons) 1195.0

2. OPERATION ADAMS (1 Nov - Continuing)

This operation was supported primarily by the 48th Assault Helicopter Company and the 180th Assault Support Helicopter Company. The following tasks were completed successfully:

- a. Total flying hours 8098.3
- b. Sorties 21,011
- c. Troops lifted 41,456
- d. Cargo (tons) 24,158

3. OPERATION ATTELBORO (7 Nov 66 - 17 Nov 66)

Operation ATTELBORO was supported by elements of the 117th Assault Helicopter Company. The following tasks were completed successfully:

- a. Total flying hours 307.0
- b. Sorties 954
- c. Troops lifted 754
- d. Cargo (tons) 149.0

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(7) The following is a summary of the statistical highlights of the helicopter accomplishments of the 10th Combat Aviation Battalion during the reporting period:

(a) Combat Assaults (Bn size)	27
(b) Sorties	70,895
(c) Tasks	31,021
(d) Troops lifted	101,183
(e) Cargo (tons)	8873.55
(f) Hours flown	22913.0
(g) Number of aircraft receiving fire	22
(h) Number of aircraft receiving hits	16
(i) WIA	3
(j) KIA	10

c. TRAINING: The 10th Combat Aviation Battalion has conducted various training activities in conjunction with combat operations. Areas receiving the most emphasis were those required to improve or sustain the individual and unit proficiency in combat operations.

(1) Night. The battalion conducted extensive individual and night training throughout the reporting period. A total of 847.7 flying hours were flown at night during the quarter. During the period 7-15 January each aviator flew a minimum of two hours of night training one hour of which was participation in non-illuminated practice combat assaults. The remaining hour was devoted to refinement of night formation flying techniques and navigation. Pathfinders were used during the assaults to provide terminal guidance to the landing zone. The 1st Brigade, 101st Airborne Division frequently utilizes a clandestine entry into the area of operations by way of the night combat assault. The night assault requires the highest degree of proficiency and skill of each aviator participating. The only method that can obtain and retain the level of proficiency required is to conduct training combat assaults at night. A battalion size night combat assault training exercise was scheduled for the night of 30 January but was cancelled on the afternoon of the 30th due to high priority operational requirements. It will be rescheduled and reported in the next ORLL.

(2) Instrument. The instrument training program was initiated on 29 August 1966 with the objective to attain and maintain a proficiency on basic instruments by non-instrument rated rotary wing aviators. The program continues to be very active and during the reporting period 352.8 hours

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were devoted to instrument training.

(3) Standardization. Increased emphasis was placed on flight standardization during the quarter. On 1 November an officer was assigned as Battalion flight standardization officer with instructions to develop written guidance for all battalion instructor pilots and supervise the implementation of this program. In December the written guide was distributed to all unit SIP's who immediately placed it in effect. Emphasis was placed on initial check outs and 90 day proficiency and standardization rides with the entire program slanted toward proficiency in all emergency procedures and use of the USAFV Checklists and standardization guides. Most training is being conducted in conjunction with operational missions with only touchdown autorotations before or after a mission. By doing training this way realism is added to the instructions. A new area of standardization was explored with the requirement for training of potential aircraft commanders in aircraft operations from both pilot seats and maximum proficiency in all emergency procedures. Only after successful completion of this training will the instructor pilot prepare and sign a certificate of proficiency and recommend aircraft commander orders be cut. Supervision of the standardization program is accomplished at the unit level by the commander and unit instructor pilots. Battalion supervision and guidance is provided by the Commander and the Battalion Flight Standardization Officer. The standardization officer makes frequent visits to the units and participates in all types of operations. To attain an average sampling the standardization officer spends approximately three days with a unit riding with two to three different aviators each day. Typical missions in which the standardization officer participated during the quarter were; night flare drop, day combat assault, gas saturation of suspected dug in enemy CP, gunship support for various missions. During the last two weeks of January all units in the battalion completed required 90 day rides and qualified aircraft commanders.

(4) Pathfinder. Each member of the team received a formal course of instruction of 43 hours in October. OJT training continues on a daily basis to retain the degree of proficiency required for their operations. Although the parachute qualification is waived in Vietnam all qualified members of the team voluntarily trained and jumped with units of the 101st Airborne Division during the period 10-18 January 1967. In addition, they supported the 101st Airborne Division jump activities by establishing the drop zones in the vicinity of Kontum. The pathfinders are used extensively on all operations to establish helicopter pick-up and landing zones and are able to maintain a high level of proficiency.

(5) First Aid. Although it is more desirable to evacuate wounded with med-evac helicopters, there are occasions when it is necessary to do so with troop carrying helicopters. Therefore, knowledge of first aid by all crew members is desirable. The battalion flight surgeon monitors the company program to insure that each crew member receives a minimum of 2 hours of first aid training quarterly. During the reporting period units have conducted from two to five hours of first aid training for all personnel present for duty.

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(6) Chemical. At the present time OJT is the method used to train crew members on the use of chemicals dispensed from helicopters. This method will be improved upon by conducting a formal course of instruction followed by a subsequent repetitive requirement to fly a minimum number of hours while wearing the protective mask. Further details will be reported in the next ORLL.

(7) Psywar: NONE

4. (C) LOGISTICS:

a. Base Camp Activities:

(1) During the quarter, the battalion was involved in many projects to improve the facilities at Dong Ba Thin and the base development plan was updated as changes became known.

(2) A significant change was made on 20 October 1966 when the 10th Combat Aviation Battalion was relieved of the responsibilities for base development of Dong Ba Thin. That responsibility now rest with the 34th General Support Group. They have further assigned the responsibility to the 335th Transportation Company (DS) stationed at Dong Ba Thin.

(3) On 1 January 1967 responsibility for installation coordinator functions was assigned to Support Command Cam Ranh Bay. Details of these responsibilities are not clearly defined at this time and will be reported in the next ORLL.

(4) Higher priority combat support mission has curtailed engineer support at Dong Ba Thin. Little fill has been hauled and little progress made on the DS Company hangars (Construction Directive BDE-116DC-45A) started in December 1966. "Self Help" was the only appreciable progress made in base development. Sites have been provided for the following facilities.

- (a) AFN Radio-TV studios and antenna.
- (b) Telephone switching central.
- (c) MP check point on Highway QC 1.
- (d) STRATCOM antenna sites.
- (e) PAE Air section.
- (f) AWCS Radio site.

(5) Other activities are as follows:

(a) 135th Aviation Company contonment and ramp area were allocated to the 335th Trans Co (DS) so that that unit would be co-located with

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the two hangars scheduled to go on the former CV-2 ramp.

(b) No fill was hauled into the area planned for the medium helicopter company.

(c) Minimum fill was hauled into the O-1 maintenance ramp area.

(d) O-1 183rd Engr Bde Hqs cantonment area was completed.

(e) Construction of the 18th Engr Bde Hqs cantonment and admin building was started.

(f) 610th Avn Maint Co (GS) constructed their own cantonment area on pads poured by the 577th Engr Bn (constr). This unit is currently displacing to another location.

(g) 577th Engr Bn (Constr) replaced by the 14th Engr Bn (CBT) in same cantonment area.

(h) Assault Support Helicopter Company (180th) is staging through this compound to Tuy Hoa.

(6) Diesel Refueling Point. Until the previous quarter, there was no diesel refueling point at Dong Ba Thin other than diesel fuel trucks. Seven 100 KW generators are in this area and each requires diesel fuel daily. The average diesel consumption is 1200 gallons daily. It was necessary to send one 1200 gallon tanker daily to the Class III yard at Cam Ranh Bay Depot which is approximately a 30 mile round trip. The tanker was then tied up the rest of the day dispensing diesel fuel. To solve this problem a large platform 40'X9 1/2'X7 1/2' was built using troop labor and dunnage obtained from ships. A 10,000 gallon collapsible tank was placed on this platform so that diesel fuel could be dispensed by gravity flow. The platform is situated so that a truck can drive alongside it and refuel. There have been no problems refueling with this equipment. Diesel is now hauled from Cam Ranh Bay Depot on a weekly basis using 5,000 gallon tankers. A large reserve is maintained with the 10,000 gallon collapsible tank. We are in the process of establishing a MO-Gas refueling point using the same type set up.

b. Go-No Go Fuses.

This unit has experienced a critical shortage of go-no go-fuses which is a final filter used in the 100 GPM miniport fuel dispensing system FSN 1560-912-3539. It is also utilized as the only filter in the 100 GPM Kenco fuel dispensing pump FSN 4300-900-8544. This unit presently has essential fuel dispensing equipment declined due to the lack of go-no go-fuses, FSN 4930-983-4153. Recent requisition experience includes the loss at depot of an O2 priority requisition # 6349-0802, the loss of a red ball requisition and no answer on a subsequent red ball requisition. A third red ball requisition was submitted on 29 December 1966 and no results have been obtained.

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as of 31 January 1967. The assistant director of petroleum at Cam Ranh Bay has also been trying to obtain these fuses for this unit without success. Requisitions submitted by the individual combat assault companies have not been filled. This fuse is also known as Bendix part # 041-420-S.

c. PLL.

This unit was experiencing difficulty in maintaining the assigned TO&E vehicles. Repair parts when needed, were not on hand and when requested through support units took an excessive amount of time to arrive. Inspections of the units motor pools revealed PLL's were not being maintained properly, many repair parts authorized to be stocked at unit level were not on hand within the motor pools and were not on request. Also it was found that units did not have current PLL's computed on current densities on file with their support unit, therefore some parts needed were not being stocked at support units. PLL's have been reviewed and up dated and more needed repair parts are being received.

d. Aircraft Maintenance.

(1) The following statistics reflecting maintenance and availability during the period have been compiled from applicable DA Forms 1352:

MONTH	UNIT	NO. A/C ASGD	PERCENT FLYABLE	PERCENT EDP	PERCENT EDM	TOTAL HRS FLOWN
NOV 66	48th AHC	28	75.2%	12.0%	12.8%	2097
	117th AHC	25	86.9%	2.4%	10.7%	2070
	129th AHC	26	74.3%	14.4%	11.3%	2164
	281st AHC	25	85.5%	1.0%	13.1%	1236
	BN TOTAL	104	79.9%	8.0%	12.1%	7567
DEC 66	48th AHC	28	58.7%	13.4%	27.9%	2385
	117th AHC	27	83.2%	4.0%	12.8%	1891
	129th AHC	26	65.1%	15.4%	19.5%	1956
	281st AHC	26	76.3%	8.7%	15.0%	1089
	BN TOTAL	107	70.5%	10.5%	19.0%	7321
	180th ASHC	16	53.3%	11.6%	35.1%	820
JAN 67	48th AHC	28	80.6%	9.2%	10.2%	2594
	117th AHC	30	86.3%	3.9%	9.8%	2142
	129th AHC	29	83.8%	7%	12.1%	1914
	281st AHC	25	76.9%	14.2%	8.9%	1291
	BN TOTAL	112	82.1%	7.6%	10.3%	7941
	180th ASHC	16	55.8%	13.0%	31.2%	827
TOTAL	48th AHC	28.0	71.5%	11.5%	17.0%	7076
1 NOV-	117th AHC	27.3	85.5%	3.5%	11.0%	6103
31 JAN	129th AHC	27.0	74.8%	11.0%	14.2%	6034
	281st AHC	25.3	79.4%	8.2%	12.4%	3616
	BN TOTAL	107.6	77.6%	8.6%	13.8%	22829
	180th ASHC	16.0	54.5%	12.3%	33.2%	1647
	TOTAL HRS					24476

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MONTH	UNIT	FLYING HR PROGRAM	PERCENT PROGRAM FLOWN	AVG HRS PER A/C
NOV 66	48th AHC	1680	124.8%	74.9
	117th AHC	1500	138.0%	82.8
	129th AHC	1560	138.7%	83.2
	281st AHC	1500	82.4%	49.4
	BN TOTAL	6240	121.2%	72.8
DEC 66	48th AHC	1680	142.0%	85.2
	117th AHC	1620	116.7%	70.0
	129th AHC	1560	125.4%	75.2
	281st AHC	1560	69.8%	41.9
	BN TOTAL	6420	114.0%	68.4
	180th ASHC	800	102.5%	51.2
JAN 67	48th AHC	1680	154.4%	92.6
	117th AHC	1800	119.0%	71.4
	129th AHC	1740	110.0%	66.1
	281st AHC	1500	86.1%	51.6
	BN TOTAL	6720	118.1%	70.9
	180th ASHC	800	103.4%	51.7
TOTAL	48th AHC	5040	140.5%	84.3
1 NOV -	117th AHC	4920	124.0%	74.4
31 JAN	129th AHC	4860	124.2%	74.5
	281st AHC	4560	79.3%	47.6
	BN TOTAL	19380	117.8%	70.7
	180th ASHC	1600	102.9%	51.5

(2) Movement of Maintenance Units to Kontum.

(a) The 140th Transportation Detachment, in support of the 117th Assault Helicopter Company, departed Pleiku, RVN at 1100 hours, 7 December 1966 by motor convey and arrived Kontum 1400 hours, 7 December 1966. The unit lost 12 hours operation to load and approximately 1½ days after arrival to become completely operational. No problems were encountered.

(b) The first element of the 394th Transportation Detachment, in support of 129th Assault Helicopter Company, departed Tuy Hoa, RVN on 5 December 1966 by C-130 aircraft for Kontum. This element consisted of one 1¼ ton truck and trailer, two pallets, and 24 personnel. The second element received orders from their forward element at 1700 hours, 10 December to be at Tuy Hoa South Airfield by 0800 hours, 11 December for movement to Kontum by C-130 aircraft. Movement instructions from S-4 was for the unit to be at Tuy Hoa South on 14 December instead of 11 December. The unit requirement was 2 C-130 loads when they actually required 4. The first C-130 arrived Tuy Hoa at 1300 hours, 14 December and loaded four (4) pallets. The second C-130 arrived Tuy Hoa at 1400 hours 15 December and took six (6) pallets. The third C-130 arrived Tuy Hoa at approximately 1530 hours 15 December and

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took one (1) triple pallet and one (1) regular pallet. The fourth C-130 arrived Tuy Hoa at 1300, 16 December and carried the remaining element, which consisted of 14 personnel, one (1) 3/4 ton trailer. The operational capability of this unit was seriously hampered by the delay of the element at Tuy Hoa South for 5 days. It is recommended that in future moves that the Supporting Field Maintenance Detachment, with all aircraft supplies, accompany or precede the supported assault helicopter company and that units submit accurate airlift requirements when planning a move.

(3) Movement of maintenance units from Kontum to Dong Ba Thin, RVN.

(a) Movement of the 140th Transportation Detachment, supporting 117th Assault Helicopter Company, from Kontum to Dong Ba Thin, RVN 15 - 19 January 1967:

1. The movement of the 140th Trans Det from Kontum to Dong Ba Thin, Republic of Vietnam was conducted during the period 15 - 19 January 1967.

2. The detachment was divided into three elements for movement: The advance party, main body, and the rear party. All vehicles and major items of equipment were moved in convoy. Only enough equipment remained with the rear party to complete work-in-progress and effect temporary fixes. Three S&P trailers with tractors and two 5-ton tractors without trailers were obtained from the 54th Trans Bn representative in Pleiku and were used to haul conex containers and shop vans. These vehicles arrived in sufficient time for the convoy to meet its start time.

3. The convoy departed Kontum at 150715 January and arrived at Qui Nhon at 151600 January and obtained billets at the Terminal Transfer Point west of the city on Highway 19. At 161400 January, the convoy was called to the port for loading aboard LST 491. Loading was completed at 162330 January. The LST sailed at 171740 January and docked at Cam Ranh Bay at 180900 January. All convoy elements closed at Dong Ba Thin by 1300 hours the same day.

4. The advance party departed Kontum by C-130 aircraft at 181100 January and arrived at Cam Ranh Bay at 181500 January. The rear party arrived with the 117th Aviation Company from Kontum at 191700 January.

5. The 140th Trans Det was 100 percent operational as of 191600 January 1967.

(b) Movement of 394th Transportation Detachment from Kontum to Dong Ba Thin, RVN 18 - 20 January 1967:

1. Maintenance tents and equipment were packed and loaded on pallets on 18 January, except for a few hand tools required for minor maintenance. All personnel and equipment, consisting of 3 trucks with trailers and 10 pallets, were loaded aboard C-130 aircraft between 0700 and 0900, January. Unit arrived Dong Ba Thin, RVN at 1300 hours. Maintenance Shelters were erected, equipment unpacked and the detachment was operational at 1700 hours, 19 January 1967. The unit received the first work order request at 0800 hours, 20 January.

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2. Future moves will require approximately 15 additional pallets to load aircraft technical supplies that were not on hand at Tuy Hoa to be moved to Kontam or back to Dong Be Thin.

e. Flight Safety.

(1) The following is a review of the aircraft accidents and combat losses of the 10th Combat Aviation Battalion during the period 1 November 1966 - 31 January 1967.

Incidents	8
Major Accidents	12
Combat Loss	2
Precautionary Landings	10

(2) The following is a brief summary of each combat loss:

(a) On 11 Nov 66 a UH-1B attacking an emplaced enemy machine gun was shot down and destroyed. All four crew members were lost.

(b) On 2 Dec 66 a UH-1D was shot down while attempting to extract a reconnaissance team. All four crew members and one passenger were lost.

(3) The following is a brief summary of each major accident:

(a) On 4 Nov 66 a UH-1D attempted a take-off from a confined area. Main rotor blades struck trees and the aircraft crashed from twenty feet. There were no injuries to crew members but a bystander's foot was severed by flying debris.

(b) On 16 Nov 66 a UH-1D on test flight experienced severe vibrations in flight and entered autorotation. The aircraft was landed with only partial directional control and was demolished. Minor cuts were suffered by personnel on board.

(c) On 16 Nov 66 a UH-1D lost RPM on an approach to a pinnacle during low visibility conditions. The aircraft landed short of desired touch-down point and overturned. One crew member suffered minor injuries.

(d) On 17 Nov 66 a UH-1D on a combat assault struck trees in the landing zone during a period of low visibility. Extensive damage resulted to fuselage and main rotor. There were no injuries.

(e) On 24 Nov 66 a UH-1D lost RPM and settled into trees while at a high hover over an unfavorable LZ at night. The aircraft was lost but there were no crew injuries.

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(f) On 1 Dec 66 a UH-1D experienced a partial loss of power while on short final approach and crashed into trees. There were no crew injuries.

(g) On 3 Dec 66 a UH-1D struck trees while hovering in a confined area. There was incident damage to tail rotor assembly and cabin assembly. No injuries to crew.

(h) On 17 Dec 66 a UH-1D in straight and level flight experienced a loss of RPM. Pilot entered autorotation and then the engine failed completely. Aircraft landed hard, causing extensive damage to tail boom, both skids and one main rotor blade. No injuries to crew.

(i) On 23 Dec 66 a UH-1D on take-off from a confined area experienced a loss of power and settled back into trees. Tailboom was severed and aircraft rolled inverted. The pilot suffered head lacerations, the crew chief suffered a broken leg, broken jaw and head lacerations and five passengers suffered lacerations and bruises.

(j) On 23 Dec 66 a UH-1D on final approach to a PZ yawed violently to the right, then rapidly lost power and RPM. Aircraft settled into trees and came to rest on its left side with major damage resulting. There were no injuries.

(k) On 5 Jan 67 a UH-1D hovering against a slope while boarding passengers lost anti-torque control and turned into trees. Tail rotor and gear box, main rotor and transmission were sheared from aircraft. There were no injuries.

(l) On 31 Jan 67 a UH-1D on take-off from a confined area lost power and settled into trees, coming to rest on its right side with tail rotor severed and transmission sheared. No injuries to crew or passengers.

(h) An analysis of the accidents and incidents which occurred during the period showed that maintenance oriented problems caused the greatest loss of aircraft. The influx of newly-graduated aviators which occurred in October and November did not produce the anticipated upsurge of accidents attributable to inexperience, indicating the new aviators are receiving good training at the Aviation School and in the tactical aviation units.

5. (U) CIVIL AFFAIRS.

a. The necessity of close coordination between civil affairs officers and civilian officials needs to be re-emphasized. Far too often individual units initiate civic action programs of their own without first consulting with the local officials to assure that these plans are in agreement with their desires. The use of a centrally located civil affairs officer to coordinate efforts of other civic action personnel is required.

b. When beginning a civic action project a full and complete survey should be made to insure that the unit has the capability of completing the

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project. Example: A market place was constructed in a marshy area near the village Suoi Vinh with intentions of building a road across the marsh to the market place. After beginning the construction of the road it was discovered that the vehicles immediately became stuck in the marsh. The project was not able to be completed and the Vietnamese now have a useless market place.

c. As a solution to the above problems the MACV advisor team in Cam Ranh City is establishing a coordination board. All civic actions in the Cam Ranh City area will be processed through this board in the future.

6. (C) PERSONNEL.

a. The officer and enlisted strength of the 10th Combat Aviation Battalion on the last day of each month inclusive on this report are as follows:

Unit	Authorized			30 November			31 December			31 January		
	OFF	WO	EM	OFF	WO	EM	OFF	WO	EM	OFF	WO	EM
HHC	24	3	121	39	9	295	39	15	266	34	9	271
48th	17	53	230	28	24	209	28	40	204	26	49	216
117th	17	53	230	25	32	226	24	40	225	23	46	223
129th	17	53	230	25	29	231	25	46	218	23	45	234
180th	14	26	228	19	15	218	19	14	221	17	14	220
281st	17	53	230	24	25	200	24	31	190	26	38	195
TOTAL	106	241	1369	160	134	1379	159	186	1329	149	201	1359

b. A review of the above statistics reveals a steady improvement in a rather prevalent understrength of warrant officers. Enlisted strength has remained at a stable level during this period. The following figures verify a similar improvement in the net understrength of warrant officers and officers assigned and attached.

NET PERCENT UNDERSTRENGTH

Unit	30 November		31 December		31 January	
	OFF & WO	EM	OFF & WO	EM	OFF & WO	EM
HHC	NONE	NONE	NONE	NONE	NONE	NONE
48th	25.7%	9.1%	2.9%	11.3%	NONE	6.1%
117th	18.6%	1.7%	8.6%	2.2%	1.4%	3.0%
129th	22.9%	NONE	NONE	5.2%	2.9%	NONE
180th	15.0%	4.4%	17.5%	3.1%	22.5%	3.5%
281st	30.0%	13.0%	21.4%	17.4%	8.6%	15.2%
TOTAL	15.3%	NONE	0.6%	3.3%	NONE	0.8%

c. An examination of the statistics reveals a continuing imbalance in grade structure of officers within the assault helicopter companies. Positions

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are often occupied by officers in a higher grade than authorized by TOE. This problem is recognized by higher headquarters, and efforts are being made to rectify the situation by assignment of officers in appropriate strength and grade. However, the understrength problem becomes more evident when considering present for duty strengths as indicated below:

<u>Present for Duty</u>				<u>Present for Duty/Percent Understrength</u>			
UNIT	OFF	WO	EM	OFF	WO	EM	OFF & WO
HHC	27	6	160	NONE	NONE	NONE	NONE
48th	26	37	186	NONE	30.2%	19.1%	10.0%
117th	22	37	178	NONE	30.2%	22.6%	15.7%
129th	23	36	201	NONE	32.1%	12.6%	15.7%
180th	17	14	211	NONE	46.2%	7.5%	22.5%
281st	25	29	181	NONE	45.3%	21.3%	22.9%
TOTAL	140	159	1117	NONE	34.0%	18.4%	13.8%

d. Although the assigned enlisted strength of the Battalion has remained at an acceptable level, present for duty figures indicate a substantial decrease in strength. There is a very significant manning shortage in the field of aircraft maintenance personnel. The following strength figures, valid as of 31 January, are representative of the entire reporting period.

<u>MOS</u>	<u>TITLE</u>	<u>AUTHORIZED</u>	<u>ASSIGNED</u>	<u>PERCENT SHORT</u>
67A10	A/C Maint Crewman	54	14	74.1%
67W40	S/E S/R Hel Mech	33	15	54.5%
67W20	Hel Tech Insp	21	7	66.7%
67Z40	A/C Repair Chief	13	10	23.1%
67Z50	A/C Repair Chief	5	4	20.0%
68A10	A/C Comp Repair App	17	7	58.8%
68E20	Rotor & Prop Rpmn	10	8	20.0%
68F20	A/C Electrical Rpmn	12	8	33.3%

The above shortages are further magnified by the percentage of maintenance personnel not present for duty. This shortage of critically needed maintenance personnel is hampering the maintenance efforts of the 10th Combat Aviation Battalion, and unless rapidly alleviated by the assignment of qualified personnel, it may adversely affect the operational capability of assigned units.

e. In summary, units of the 10th Combat Aviation Battalion will continue to perform combat missions with fewer members of men than those authorized by TOE. Moreover, based on the normally large number of personnel in transient, organic units will seldom approach a present for duty strength that is in proximity or equal to assigned strength, even if assigned and attached strength is 100% of those authorized.

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7. (U) ARTILLERY - NONE

8. (C) SIGNAL.

a. The signal section has been responsible for the operation of communications facilities for the command post and also for the staff supervision of communications for the Dong Ba Thin base camp area. The employment of the Battalion as a rapid moving assault support unit has resulted in communications requirements that exceed TO&E capability. The signal section has operated in four locations simultaneously: Base camp, forward command post, jump command post, plus personnel operating high frequency radio equipment with a separate company. Although the area communications system is used, it is not adequately responsive to the rapid deployment of the Battalion. Extensive use is made of palletized high frequency SSB aircraft radio equipment which is used to back up the command circuit in the area system. In many cases, the high frequency equipment is the only means of communications, especially during rapid movements made with short advance notice. The high frequency equipment provides an additional element of security during the early phase of an operation as the changing of an established circuit often telegraphs a move. The equipment, which can be set up in a matter of minutes is utilized for both voice and secure radio teletype.

b. The establishment of an engineer brigade headquarters at Dong Ba Thin has doubled the classified traffic handled by the communications center. There has also been a substantial increase in courier traffic. It is anticipated that the additional requirements placed on the Battalion by the engineer brigade will be lifted in the immediate future due to the impending arrival of a signal center platoon which will establish a communications center for the Dong Ba Thin Complex.

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SECTION 2 (C) COMBAT OPERATIONS OBSERVATION AND RECOMMENDATIONS

Part I, Observations

1. (C) PERSONNEL

a. Item: Shortage of qualified maintenance personnel

Discussion: A critical shortage of trained maintenance personnel has existed in this Battalion throughout the last three months. Although the herculean efforts of present personnel has upheld the quality of maintenance work throughout this period, it is questionable if such results can go on indefinitely.

Observation: Outstanding results from maintenance personnel can be achieved by proper command emphasis and supervision. The job can be done by a reduced number of personnel, yet it is doubtful that such results can be achieved indefinitely.

2. (C) OPERATIONS

a. Item: Pathfinder recovery.

Discussion: During the conduct of a night combat assault or extraction using pathfinders, members of this team plus their equipment are the last to be pulled from the LZ/PZ.

Observation: Due to the number and distance between lights used to mark the LZ/PZ, an inordinate amount of time is required to recover and load the equipment on helicopters that must wait in the LZ. If an extraction was being conducted, the time is extremely critical since little or no security of the PZ exist.

b. Item: Night aerial reconnaissance for detection and attack of the enemy.

Discussion:

(1) Movements of the enemy at night can be rendered difficult and effectively reduced by aerial reconnaissance at night. Equipment used is one UH-1D equipped with "firefly", one or two crew served Night Vision Devices and approximately 10 flares, with two gunships following. The mission commander should ride in this ship and be able to communicate with his flight and the appropriate (sector) control. It is not advisable for him to fly the ship as he should be in a position in the ship to monitor all operations. "Firefly" can be used to search a small area or narrow route such as a stream-bed, road, trail or abandoned village. However, the light is a "give-away" and allows the enemy to take possible measures to avoid visual detection. Therefore the "firefly" should be used sporadically. The larger size night

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vision (Starlight) device is effective to detect enemy movement without any tell-tale beam of light. Information must be made with ground units to determine their planned flight location.

(2) The mission commander in the lead ship monitors the reconnaissance by "Starlight" device. If a positive target is identified and to be fired upon, a location is given to the gunships - this may be by coordinates or marking by tracers. A time delay should be exercised so as to give the minimum time to take action. If coordinates or verbal target area description can be given, the lead ship can pull up and drop flares for the gunships.

(3) Best altitude and ground speed appears to be 500 feet absolute altitude and 60 knots for both "Firefly" and "Starlight". Gunships follow at 1000 to 1500 feet absolute with flare drop altitude from 2500 - 3500 feet. Satisfactory results with flares can be obtained with drops from as low as 1000 feet.

(4) None of the lighting systems appear to have a total superiority. However, when used in conjunction with and supplementing one another they provide an effective system to detect enemy movement at night.

(5) Training of crews is necessary but should require only one or two nights to perfect the coordination required between aircraft. The mission commander must be thoroughly familiar with the situation and the area of operations to include likely avenues of enemy approach and assembly areas. Areas to be searched should follow a plan developed at the lowest knowledgeable headquarters. A system should be developed for rapid approval or disapproval for the attack of targets.

(6) Such flights should also be responsive to hamlets under fire or threat.

Observation: Night aerial reconnaissance can do much to restrict and inhibit the enemy. Further, it can increase the morale of the local population when used to deter an attack on a nearby hamlet. Thorough pre-planning, coordination and training are prerequisites to a successful operation.

c. Item: CH-47 Windshield

Discussion: During night operations in marginal weather conditions, the laminated plastic windshield panels, which have a transparent conductive coating embedded between layers, reflects all interior lights within the cockpit, regardless of intensity and makes it virtually impossible for the pilot to maintain visual reference outside the aircraft. The outside reference obtained is badly distorted by the conductive coating.

Observation: This condition is intolerable if the aircraft must operate in formation flight at night or in marginal weather.

d. Item: Night sling loads with CH-47 aircraft.

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Discussion: Transporting sling loads at night with CH-47A aircraft when there is no visual horizon, may create hazardous conditions. Neither can load oscillations be readily detected nor can timely corrective control response be applied to counter load oscillations, a condition which could cause the pilot to loose control of the aircraft or be forced to release the load, to preclude losing control.

Observation: Operating with sling loads at night requires a high state of individual pilot training. When no visible horizon exists the risk of losing the helicopter or the sling load must be carefully weighed against the tactical necessity for the mission.

e. Item: Night Combat Assaults

Discussion: The conduct of night combat assaults in support of the 1st Brigade, 101st Airborne Division continues to receive a great deal of interest and emphasis in the 10th Combat Aviation Battalion. Clandestine entry into the area of operations is a "by word" with the 1st Brigade and they continue to rely on the night combat assault to accomplish this feat. This is evidenced by the conduct of a two battalion size night combat assault during the reporting period.

Observation: The conduct of night combat assaults can be accomplished successfully provided the factors of favorable weather, high state of pilot proficiency, and detailed planning exist.

3. (C) TRAINING

a. Item: Night Training

Discussion: The demand for the 10th Combat Aviation Battalion to conduct night combat assaults continues. To accomplish these successfully, a high state of individual and unit proficiency in night operations is essential. Extensive night training is conducted to develop proficiency in illuminated and non-illuminated approaches to and touchdowns in the landing zone. Pathfinders are habitually used for terminal guidance in non-illuminated training exercises and actual assaults.

Observation: A night training program must provide for extensive formation flying on approach to and touchdown in the landing zone. This is considered the most critical time of any night combat assault and aviators must be disciplined through continuous training to conduct this phase successfully.

b. Item: Standardization - Training

Discussion: Unless corrected quickly and positively, newly trained aviators soon develop techniques and habits that are either unsafe or fail to follow accepted flying procedures. With the influx of relatively large

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numbers of newly trained aviators during the reporting period, the standardization program has occupied a prominent place of importance in the training program.

Observation: A system for carefully monitoring and correcting newly trained aviators is essential to the development of good habits and sound flying techniques. An aggressive and positive standardization program will produce benefits in safety and overall individual and unit performance.

c. Item: Influx of Newly Trained Aviators.

Discussion: A large number of newly trained aviators (Warrant Officers) were assigned to the 10th Combat Aviation Battalion during the last quarter. The necessary training of these personnel, in addition to normal tactical commitments, imposed a heavy load on the instructor pilots and aircraft commanders in our assault helicopter companies.

Observation: Training of these aviators during tactical operations, and a "stepped-up" unit training program minimized the additional training requirements.

4. (C) INTELLIGENCE

a. Item: Security of Information

Discussion: Change 1, dated 19 June 1966, to MACV Directive 381-21, dated 22 April 1966, supersedes MACV Directive 335-7, dated 3 June 1965, pertaining to Joint Services Anti-Aircraft Fire Incident and Damage Report (JSIDR). Under both Directives, Part I of referenced report is unclassified; however, Part I received the protective marking FOR OFFICIAL USE ONLY under the superseded Directive. Both Directives require Part I to be transmitted by phone. Part II was classified CONFIDENTIAL (when completed) under the superseded Directive, but is unclassified under the new Directive. Shortly after publication of the new Directive, instructions were received by phone that Part I remained FOR OFFICIAL USE ONLY and Part II remained CONFIDENTIAL (when completed).

Observation: Confusion exists regarding protective marking of Part I and classification of Part II. This confusion is compounded by the rapid change of duties and turnover of personnel. Compromises have occurred, and will continue to occur, in that personnel who are not aware of the difference between the written Directive and the telephonic policy have transmitted the CONFIDENTIAL Part II by phone. In addition, if Part I does, in fact, require the protective marking FOR OFFICIAL USE ONLY, its transmission by phone is prohibited by paragraph 43, USARV Regulation 380-5.

5. (C) LOGISTICS

a. Item: Base Development Responsibility.

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Discussion: Base development can best be managed if it is the responsibility of the Installation Coordinator. It is considered inadvisable to separate responsibility for these functions when each must be carefully coordinated with the other to insure efficiency and to prevent costly mistakes.

Observation: Base Development is now the responsibility of a company commander stationed at Dong Ba Thin. He has neither the resources nor the technical resources to coordinate the myriad of details involving real estate and utilities. The installation coordinator for Dong Ba Thin presently is the CG, Support Command, Cam Ranh Bay. However, the 10th Combat Aviation Battalion has not yet been relieved of any installation coordinator functions as of this date.

b. Item: Go-No Go Fuzes

Discussion: The 10th Combat Aviation Battalion is constantly operating from a forward area in support of highly mobile ground forces. In most instances this support is rendered by the combination of two or more assault helicopter companies plus supporting CH-47 aircraft operating from locations requiring the use of organic refueling equipment, supplied JP-4 by 500 gallon pods.

Observation: Every effort is being made to keep this organic refueling equipment operational. However the requisitioning of a most critical part i.e. the Go-No Go Fuze (reference paragraph 4b of section I) has met with no success.

Part II, RECOMMENDATIONS

1. (U) PERSONNEL

(Reference Section 2, Part I). Recommend that on the job training be accomplished wherever possible to alleviate heavy job load on maintenance personnel. Continued emphasis should be placed on acquisition of maintenance qualified individuals to bring subordinate units up to authorized strength in this critical field.

2. (C) OPERATIONS

(Reference Section 2, Part I). Recommend that the gold plated windshield now installed on the CH-47 helicopter be replaced with the clear windshield as soon as possible to permit safe formation flying at night.

3. TRAINING

(Reference Section 2, Part I). Recommend that continued emphasis be placed on assignment of incoming aviators to preclude any single unit from experiencing an excessive turnover of personnel at any time. Further, recommend maximum use of training flights to expedite training of new aviators and alleviate

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the still extremely heavy load carried by our Instructor Pilots and Aircraft Commanders.

4. (C) INTELLIGENCE

(Reference Section 2, Part I). Recommend that a command-wide policy clarification statement be published which clearly states the protective marking, classification, and transmission requirements of referenced report.

5. (C) LOGISTICS

a. (Reference Section 2, Part I). Recommend prompt action be initiated to insure that adequate supplies of Go-No Go fuzes for the miniport system and the 100 GPM Kenco pumps are stocked in depots serving the Vietnam theatre of operations. Further recommend that immediate action be initiated to procure these fuzes direct from the manufacture force issue to using units in sufficient quantities to alleviate the existing critical shortage.

b. (Reference Section 2, Part I). Recommend that the 10th Combat Aviation Battalion be relieved of all installation coordinator functions in accordance with 1st Field Forces, Vietnam Regulation 10-3, dated 1 January 1967.

B. L. HARRISON

Lt Col, Infantry
Commanding

4.2 Incl

1. Clearing LZ's
2. Armed Hel Spt
3. Ltr, 281st AHC (Mini Gun)
4. DD Form 365F

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AVGD-3C (6 Feb 67) 1st Ind
SUBJECT: Operational Report for Quarterly Period Ending 31 January 1967
(COS CSFOR-65)

HEADQUARTERS, 17TH COMBAT AVIATION GROUP, APO 96240

14 February 1967

TO: Commanding General, I FFORCEV, APO 96240

1. The 10th Combat Aviation Battalion Operational Report for Quarterly Period ending 31 January 1967 is forwarded for information and action.

2. This Headquarters has reviewed this ORLL and concurs with Part II, recommendations as modified herein.

a. Personnel - Concur

b. Operations: The gold plated windshield in the CH-47 was designed to reduce fogging and icing. Though this windshield may be desirable in other theaters of operations it has more disadvantages than advantages in RVN. The 10th CAB will be requested to submit SIR through appropriate channels.

c. Training - This action is being taken now.

d. Intelligence: Action is being taken by this headquarters to clarify the problem area.

e. Logistics: Appropriate steps have been taken through 1st Aviation Brigade to adequately service the 100 GPM Kenco pumps. Continued action is being taken to resolve the problems regarding installation coordinator at Dong Ba Thin.

FOR THE COMMANDER:

1 Incl
as

Franklin L Wilson
FRANKLIN L WILSON
LTC, Infantry
Adjutant

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1. This document is classified
SECRET. It is to be controlled
and its distribution is to be
controlled.

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AVFA-GC-OT (6 Feb 67)

2d Ind

SUBJECT: Operational Report for Quarterly Period Ending 31 January 1967, RCS CSFOR-65 (U)

HEADQUARTERS, I FIELD FORCE VIETNAM, APO 96350 10 MAR 1967

TO: Commanding General, 1st Aviation Brigade, APO 96307

1. (U) Concur with the contents of Operational Report of Lessons Learned for Quarterly Period Ending 31 January 1967 of 10th Combat Aviation Battalion, and the 1st Indorsement with the following comments.

2. (C) Reference Section I - Significant Unit Activities.

a. Reference paragraph 6a: USARV has advised this headquarters that there is a shortage of replacements of aviation MOS's in-country, but the general strength picture is improving.

b. Reference paragraph 6b: Part of the shortfall of personnel during fourth quarter of calendar year 1966 was the result of faulty requisitioning which has been corrected.

c. Reference paragraph 6c: USARV is aware of this and has taken it into consideration in allotting aviation replacements.

d. Reference paragraph 6d: It is believed that the present for duty strength figures are excessive because of the replacement problems experienced by the organization, and the general shortage of aviation personnel.

3. (C) Reference Section 2, Part I - Significant Unit Activities. Reference paragraph 2d: All pilots of CH-47 helicopters should be made aware of limitations involved in operations requiring sling loads at night. The greatest hazard is the lack of a visible horizon without which the pilot has a difficult time controlling the aircraft, and the risk of accident is high. The use of flares to illuminate the area will greatly reduce the danger of an accident, however, successful accomplishment of a night sling load mission requires an aviator with a high degree of skill and proficiency.

4. (C) Reference Section 2, Part II - Recommendations.

a. Reference paragraph 1: Appropriate action has been taken to improve the situation of shortages of critical MOS's.

b. Reference paragraph 2: The organization should submit an equipment improvement report (EIR) on the CH-47 windshield as outlined in TM 38-750, dated 15 January 1964.

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AVFA-CC-OT (6 Feb 67)

10 MAR 1967

SUBJECT: Operational Report for Quarterly Period Ending 31 January 1967, RCS CSFOR-65 (U)

c. Reference paragraph 3: Units should be authorized to use aircraft for sole purpose of training newly assigned aviators. Attempts to conduct initial orientation and training in conjunction with service missions does not provide for proper standardization of training of newly assigned aviators.

d. Reference paragraph 4: A review of MACV Directive 381-21, with change, dated 22 April 1966, revealed that Part I of the report is unclassified and is transmitted telephonically, Part II of the report is classified CONFIDENTIAL and is transmitted electrically. There is no conflict inasmuch as the latest directive published always governs.

e. Reference paragraph 5a: The office of Customer Assistance, all Aviation Commands, and Director of Petroleum, Cam Ranh Bay, are aware of the critical need for go-no-go fuzes, and are attempting to expedite delivery.

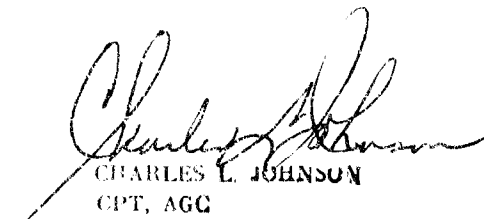
f. Reference paragraph 5b: In accordance with I FFORCEV Regulation 10-3, dated 1 January 1967, the Commanding General, Support Command, Cam Ranh Bay, as the installation coordinator, has the authority to appoint deputy coordinators as required.

g. Reference Inclosure 1 (Clearing Landing Zones):

The use of explosives to clear landing zones is of increasing interest to OPCON organizations. Experimentation in this type of landing zone, clearance will be discussed at the next I FFORCEV Engineer conference.

FOR THE COMMANDER:

4 Incls
nc


CHARLES L. JOHNSON
CPT, AGC
Asst AG

Cy Furnished:
10th Combat Aviation
Battalion

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AVXA-C (6 Feb 67)

3rd Ind

SUBJECT: Operational Report for Quarterly Period Ending 31 January 1967
RCS CSFOR-65 (U)

HEADQUARTERS, 1ST AVIATION BRIGADE, APO 96307

19 MAR 1967

TO: Commanding General, United States Army Vietnam, ATTN: AVHGC-DH
APO 96307


1. (U) This headquarters considers the Operational Report -- Lessons Learned for the 10th Combat Aviation Battalion to be adequate and concurs with the contents of subject report as indorsed, with the following comments:

2. (U) Reference Section II, Part II, Para 5a, Page 6: Information received from 1st Logistical Command on 13 March 67 indicates that 20,000 Go-No-Go fuzes are presently on order. A delivery date has not been received. This headquarters concurs that these items are urgently needed and should be shipped as expeditiously as possible. The 10th Combat Aviation Battalion currently has the required items on requisition through Cam Ranh Support Command. To assist aviation units with refueling facilities, maintenance of equipment etc., USARV G-4 Section recently commenced an inspection of all refueling facilities in RVN. This inspection should be to the benefit of all concerned.

3. (U) Reference Section II, Part II, Para 5b, Page 6: This headquarters forwarded a letter, subject: Establishment of a Sub-Area Command at Dong Ba Thin, to Headquarters, USARV, on 20 February 1967 requesting that the 10th Combat Aviation Battalion be relieved of installation coordinator functions. This letter further recommended that 1st Logistical Command establish a Sub-Area Command at this location to relieve tactical units of the burden imposed by this added responsibility. A response to this letter has not been received.

FOR THE COMMANDER:

4 Incl
nc


J. M. GREETHAM
Captain, AGC
Asst Adjutant General

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Received by: G-4
Date: 19 MAR 67
Initials: [illegible]

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AVHGC-DH (6 Feb 67)

4th Ind

SUBJECT: Operational Report-Lessons Learned for the Period Ending
31 January 1967 (RCS CSFOR-65)

HEADQUARTERS, UNITED STATES ARMY VIETNAM, APO San Francisco 96307 21 APR 1967

TO: Commander in Chief, United States Army, Pacific, ATTN: GPOP-OT
APO 96558

1. This headquarters has reviewed the Operational Report-Lessons Learned for the period ending 31 January 1967 from Headquarters, 10th Combat Aviation Battalion as indorsed.

2. Pertinent comments follow:

a. Reference Paragraph 1, Page 27; Paragraph 1, Page 31; and Paragraph 4a, 2d Indorsement, concerning personnel shortage: Concur. Comment of Headquarters, I Field Force Vietnam, in 2d Indorsement, indicates action has been taken to alleviate the shortage.

b. Reference Paragraph 2c, Page 28; Paragraph 2, Page 31; Paragraph 2b, 1st Indorsement; and Paragraph 4b, 2d Indorsement, concerning CH-47 windshields: Concur. Clear plastic windshields are arriving in-country and are being installed by the CH-47 unit in the 10th Combat Aviation Battalion.

c. Reference Paragraph 2d, Pages 28 and 29; and Paragraph 3, 2d Indorsement, concerning sling loads with CH-47 aircraft at night: Hazards in transporting sling loads at night with CH-47A aircraft have been recognized by all CH-47 units in USARV. The Commanding General, 1st Aviation Brigade, will reiterate hazards involved and the high degree of skill and proficiency required of pilots in the execution of this type mission in the 1st Aviation Brigade's quarterly publication of "Tactical Lessons Learned." The quarterly USARV Aviation Officer's coordination conference notes will include a reminder to non-aviation brigade units having CH-47 aircraft assigned.

d. Reference Paragraph 3c, Page 30; Paragraph 3, Page 31; Paragraph 2c, 1st Indorsement; and Paragraph 4c, 2d Indorsement, concerning the influx of newly trained aviators: Concur with comment of 17th Aviation Group in 1st Indorsement.

e. Reference Paragraph 4, Page 30; Paragraph 4, Page 32; Paragraph 2d, 1st Indorsement; and Paragraph 4d, 2d Indorsement, concerning security of information: This problem has been alleviated. Reporting requirements concerning Joint Services Anti-Aircraft Fire

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This document may be regraded "UNCLASSIFIED" when separated from classified inclosure

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AVHGC-DH (6 Feb 67)

4th Ind

21 APR 1967

SUBJECT: Operational Report-Lessons Learned for the Period Ending
31 January 1967 (RCS CSFOR-65)

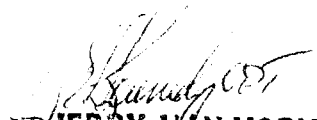
Incident and Damage Reports, as outlined in MACV Directive 380-21, have been superseded by MACV Directive 380-34, dated 10 February 1967. Information contained in the report required by the new directive is unclassified.

f. Reference Paragraph 5a, Pages 30 and 31; Paragraph 5b, Page 32; Paragraph 4f, 2d Indorsement; and Paragraph 3, 3d Indorsement, concerning base development responsibilities: Concur. The Commanding General, 18th Engineer Brigade has been assigned base development responsibilities for Dong Ba Thin, and in accordance with USARV Regulation 10-4 will also be designated the Installations Coordinator.

g. Reference Paragraph 5b, Page 31; Paragraph 5a, Page 32; Paragraph 2e, 1st Indorsement; Paragraph 4e, 2d Indorsement; and Paragraph 2, 3d Indorsement, concerning Go-No-Go fuzes for miniport refueling systems: Concur. Requisitions for RVN depot stocks of Go-No-Go fuzes have been submitted. Follow-up messages have been dispatched and USAMEC has advised that action is being taken to expedite procurement and shipment of fuzes. USAMC PM-POL has also been contacted concerning the acute shortage of fuzes in RVN. USAMC has directed USAMEC to ship 500 of each type fuze required under Red Ball Express procedures. Fuzes will be issued to units upon receipt.

FOR THE COMMANDER:

4 Incl
nc


JERRY VAN HORN
2LT. AGC
Ant AG

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GPOP-OT (6 Feb 67)

5th Ind (U)

SUBJECT: Operational Report-Lessons Learned for the Period Ending
31 Jan 67(RCS CSFOR-65) - Hq 10th Cbt Avn Bn

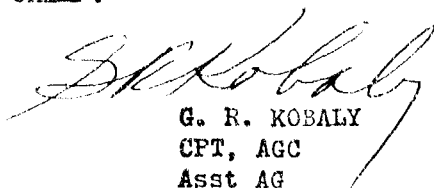
HQ, US ARMY, PACIFIC, APO San Francisco 96558

22 MAY 1967

TO: Assistant Chief of Staff for Force Development, Department of the
Army, Washington, D. C. 20310

This headquarters concurs in the basic report as indorsed.

FOR THE COMMANDER IN CHIEF:


G. R. KOBALY
CPT, AGC
Asst AG

4 Incl
nc

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GPOP-OT (6 Feb 67)

3th Ind (US)

SUBJECT: Operational Report-Lessons Learned for the Period Ending
31 Jan 67(RDS GPOP-65) - Hq 10th Cbt Avn Bn

HQ, US ARMY, PACIFIC, APO San Francisco 96558 22 MAY 1967

TO: Assistant Chief of Staff for Force Development, Department of the
Army, Washington, D. C. 20310

This headquarters concurs in the basic report as indicated.

FOR THE COMMANDER IN CHIEF:

4 Incl
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G. R. KOBALY
CPT, AGC
Asst AG

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CLEARING LANDING ZONES

A. BANGALORE TORPEDO CLEARING OF LANDING ZONES

1. Initial idea was passed at a conference of Engineers at I FFORCEV by the Brigade Engineer, 3d Brigade, 25th Infantry Division. He stated that they had used bangalores on 18 foot centers to clear LZ's in high grass.

2. The Brigade Engineer, 1st Brigade, 101st Airborne Division, in conjunction with the 10th Combat Aviation Battalion, then conducted a test in attempting to drop bangalores into elephant grass. It was found that the bangalores could not be placed accurately and an effective clearing could not be made. Only small random patches of vegetation were cut. A ground emplacing test was run later in elephant grass 10 to 12 feet high. It was found that bangalores spaced 20 feet on centers would cut elephant grass to bare earth.

3. A combat airmobile assault was then accomplished into 10-15 foot bamboo/elephant grass mixture. After the preparatory fires were completed and under continuous cover of armed helicopters, a security force of one Infantry platoon and a Engineer team of 7 men jumped into the area from hovering helicopters. Eight complete bangalores (80 five foot sections) were slung in by the last helicopter. They then were assembled into 8 rows of 10 sections each. The rows were placed parallel about 15 feet apart because the growth was primarily bamboo. Both ends of each row were primed with a ring main of detonating cord. The resulting blast cleared an area approximately 60 feet by 120 feet. Short stumps of bamboo needed cutting down to make the ground clear for setting the skids down, and additional trimming on approaches and for widening the sides was needed. However, a UH-1D did safely land in the clearing before any hand cutting was done. The time required from the arrival of bundle of bangalores until the first chopper landed was 63 minutes. A principal reason for requiring so much time was that the extremely thick growth made placement of the bangalores and setting out the ring main very difficult. Two Infantry Battalions were subsequently inserted into this LZ.

4. A suggested method to reduce the time required for emplacing the bangalores is to initially lay a single line of bangalores full length down the center of the proposed LZ. This single line is fired and a cleared lane is formed from which parallel rows of bangalores can be accurately and rapidly emplaced. The ring main to fire the bangalores can also be emplaced rapidly in the cleared area.

5. In summary, the following steps outline the suggested procedure for clearing LZ's using bangalore torpedoes:

a. The number of bangalores required should be computed for laying on 20 foot centers in elephant grass and on 15 foot centers for laying in bamboo.

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b. The bangalore sections should be unloaded from the box and an adapter fastened to one end of each section prior to slinging into the employment site. This procedure saves time in the LZ.

c. A single line of bangalores should be laid the full length of the LZ down the center and fired so that a cleared lane for working space will be available.

d. From this cleared lane, bangalores are placed parallel on 15 or 20 foot centers to widen the LZ to the desired width. The bangalores are fired using a ring main of detonating cord around the edges of the cleared lane.

e. Necessary hand clearing is accomplished after the bangalores are fired. Particular attention should be given to clearing tall shoots from the approaches to the LZ.

B. PREPARED DEMOLITION FOR CLEARING LANDING ZONES

1. On 19 December 1966, the 10th Combat Aviation Battalion and the 1st Brigade, 101st Airborne Division, conducted a successful experiment using a prepared demolition charge delivered by helicopter to clear an LZ in heavy bamboo thickets (15 to 20 feet deep).

2. Previous attempts to take advantage of the explosive blast of 750/1000 lb aerial delivered bombs to clear landing zones in similar vegetation were thwarted by the inherent inaccuracies of the delivery means. To eliminate what appeared to be the only major drawback to a "one-shot" LZ it was decided to place a similar explosive charge by helicopter slingload into dense bamboo growth.

3. Previous efforts had indicated that the blast effect of the 750 lb bomb was about right, so a homemade "duplicate" was prepared using a 55 gallon drum and 700 pounds of explosive (tetrytol was used, but primarily because it was plentiful). In order to get maximum vegetation cutting effect, steel "U" pickets were cut to 6 inches less than barrel height and placed around the side of the container with the explosive in the center. The top was crimped over in an attempt to provide some restraint to the vertical component of the explosive force. The charge was dual-primed with "ropes" made of 4 strands of detonating cord which were of sufficient length to reach well into the cabin of a UH-1D while the load was being slung. A securely fastened barrel hitch, properly prepared for slinging, completed the demolition.

4. The normal emplacement crew consisted of pilot and co-pilot and two men in the cargo compartment to arm the explosive. Varying the UH-1 fuel load as required insured an adequate ability to hover out of ground effect for safety and accuracy in placing the charge. Procedurally, when the site of emplacement was selected, the pilot would inform the demolition men that

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he was ready to make his approach. At this time, each man taped a non-electric cap/time fuse/fuse lighter combination to the detonating cord leads and advised the pilot upon completion. As he made his approach, he estimated 10 seconds to touchdown of the load and the fuses were ignited. A 2-4 1/2 minute length of fuse gave adequate time for maneuvering, dropping the charge and exiting the area. Upon indication of any malfunction, particularly inability of the pilot to release the load, the demolition men could simply cut the time fuse to re-safety the charge.

5. Dropped into 15-20 foot bamboo, the charge detonation cleared a circular area 55-60 feet in diameter into which a UH-1 could hover for easy exit of troops. For ground landings, however, insufficient tail rotor clearance existed. Additional demolition or hand cutting would be required to provide this clearance in the type of dense growth encountered. A simple means of accomplishing this is to place a second similar charge from another helicopter approximately 70 feet from the first point of detonation. This provides an area of sufficient size. The entire operation can be completed in less than 10 minutes, providing an "instant LZ" for emergency use.

6. The 1st Brigade, 101st Airborne Division, now maintains two of these charges at the ready in the event that landings are necessary into similar vegetation. It is felt that the rapid insertion of reaction or rescue forces into otherwise inaccessible terrain via this method further broadens the scope of airmobility.

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I. General

A. Purpose - This annex outlines the operational procedures for armed helicopters (UH-1C) in support of airboat operations.

B. Organization:

1. Armed helicopters will be employed as a minimum of one light fire team (two helicopters) in support of a boat platoon.

2. Armed helicopters will be employed as a minimum of two (2) light fire teams in support of a boat company.

C. Command and Control:

1. Aviation support will be provided by the 281st Assault Helicopter Company or thru coordination with MACV aviation officer.

2. The armed Helicopter platoon leader/fire team leader will be under the operational control of the C.O., Co D, 5th SFGp. He will be responsible for the operational employment of armed helicopters.

3. Armed helicopters will be assigned in direct support of the USA3F B or A Detachments on a mission basis.

4. A troop carrier helicopter (UH-1D) may be used to carry the command and control element in support of an operation.

D. Tactics and Employment:

1. The fire power, speed and maneuverability of armed helicopters combined with airboat operations form an effective fighting unit and promote an important advantage over conventional units operating in areas containing water ways and heavy aquatic grass.

2. Armed helicopters will be assigned the following tasks.

a. Security - Armed helicopters can provide all around security and perform as armed escorts for the movement of airboats. This reduces the airboats vulnerability when transporting troops, movement through narrow water ways, inlets, or other channelized terrain features, and provides protection from the air. In the event of an enemy ambush, the fire team can react instantly, engage the target, and provide suppressive fire to cover the advance or withdrawal of the boat elements.

b. Armed reconnaissance - Armed helicopters can conduct reconnaissance missions either in conjunction with or without airboats. Through airground communications, the fire team leader can direct the airboats over selected routes, insuring the uninterrupted advance of the boat elements.

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Armed helicopters are capable of finding and fixing enemy positions, developing the situation, and directing the movement of the boats to the area. Thus, they can be effectively employed in a search and destroy operation, taking advantage of the airboats speed and maneuverability and gaining the element of surprise.

c. Blocking force- Through the use of its firepower, armed helicopter can effectively block the retreat or advance of enemy elements in any direction, allowing the airboats sufficient time to maneuver to attacking positions and further develop the situation.

d. Reaction force- Armed helicopter can react quickly to any point to form an effective reaction force, exploiting a success by the boat elements, suppress, delay, or destroy the enemy.

E. Communications

1. Primary Communications will be by FM Radio between ground elements and aircraft. The C&C aircraft may carry HT-1 radios with the Command Element to net with the VN elements. All radios must be pre tested to insure positive contact and to insure frequency alignment.

2. A system of visual signals should be made standard to provide a secondary or emergency communication system. This visual system should include arm and hand signals: flags: specific movement with the boat(air) i.e. zig zagging, circling, ect: and pyrotechnics.

3. Current SOI should be available to all aircraft.

F. Logistics

The aviation support will be responsible to insure the pre-positioning and arrangement for all aviation needs to include POL and Ammo to support the operation.

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281ST ASSAULT HELICOPTER COMPANY
10TH COMBAT AVIATION BATTALION
APO 96240

31 January 1967

SUBJECT: Technical Data and Evaluation of Mini Gun

TO: Commanding Officer
10th Combat Aviation Battalion
APO 96377

1. GENERAL: The 281st Assault Helicopter Company has procured mini guns and have them presently installed on two UH-1C's. The 7 round rocket pods were removed from a M-16 gun system and the mini guns were mounted in their place. The 4 flex-machine guns were left on the aircraft and are operational. The 14th Munitions Maintenance Squadron at Nha Trang installed the guns and has trained 6 enlisted men from this company in their shop to maintain the system. Backup maintenance and parts will be provided by the 14 Squadron. Additional maintenance and parts may be obtained at 4 other locations in Vietnam for the asking. The 14th Squadron will train any number of additional personnel for us. They have scheduled our guns for regular inspections by their highly trained personnel and will exchange the entire gun or systems when needed.

2. TECHNICAL DATA: No technical manuals are presently on hand but a complete set have been ordered for us by the 14th Squadron.

a. Nomenclature: The complete system, pod and gun, is called the SUU-11A/A; short authorized name: "Mini Gun" is the 7.62 calibre version of the 20mm gun used in USAF fighter aircraft. It is manufactured by General Electric Corporation. It is air-cooled and motor battery driven.

b. System weight: Empty; 245 pounds; loaded with 1500 rounds 7.62; 325 pounds.

c. Diameter 12 inches; length: 85 inches.

d. Ammunition: Regular issue 7.62; 4 to 1 tracer.

e. Rate of fire 6000 rounds perminute, constant.

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f. Recommended time of bursts: 5 seconds. Minimum: 3 seconds; maximum 7 seconds. (Firing less than 3 seconds usually damages the gun; firing over 7 seconds may be done in emergencies but has created excessive heat.)

g. Operating temperatures: Gun will operate in outside temperatures of -65 degrees F to +165 degrees F.

h. Gun Safety: At least one school trained man should be present when the guns are serviced, loaded, or fired. The gun system should be checked for the following immediately after landing and while on the ground until just prior to take off:

(1) Circuit breakers and gun selector switches off prior to landing.

(2) Disconnect electrical plug to gun pod prior to landing.

(3) (a) & (b) remains as above until airborne.

(4) On ground keep feeder disconnected.

(5) On ground keep safing section disconnected.

NOTE: Guns may be fired manually by rotating barrels by hand if safing section is connected.

(6) On ground disconnect electrical connections to barrels motor and solenoid.

i. Weight and Balance: See attached weight and balance clearance form (DD Form 365 F). The weight is well within limits and the center of gravity is within limitations when loaded or empty.

j. Wiring: All wiring was newly installed by qualified Air Force electricians. The only aircraft wiring modification was in tapping into the pilot's cyclic stick to connect the trigger for the mini guns.

k. Sighting System: No additional sighting equipment was required. The present sight for the rocket system when aligned (boresighted) with the mini guns is very workable.

l. Maintenance: The 14th Munitions Maintenance Squadron provides all the necessary parts and higher echelon maintenance that is required for the system. In addition there are four maintenance detachments spread throughout Vietnam.

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Complete system exchange may be made at any of these stations in addition to parts and maintenance. Six of our enlisted men have undergone schooling that qualifies them to perform most of the required maintenance. The following maintenance is required on the mini gun system:

- (1) After each firing: Clean and lubricate bores and chambers.
- (2) After each 3rd firing: Lubricate gun.
- (3) After 20,000 rounds: Clean, inspect and lubricate entire gun; clean pod.
- (4) After 60,000 rounds: Complete item (3) above and replace bolt heads and body.

3. EMPLOYMENT

a. General: The 281st Assault Helicopter Company installed its first mini gun system during late September 1966, and as of 31 January 1967, the initial system had been in use for approximately 50 flight hours and had fired approximately 110,000 rounds, (55,000 per gun). A second system was installed in late October, and to date, its flight hours and rounds fired totals are about half those of the first system.

b. Training: Unit transition into the mini gun system is extremely rapid and easy, primarily because the weapon is employed and fired similarly to the Army's 2.75 rocket system. A pilot experienced and accurate with 2.75 rockets can be equally proficient with the mini gun system by merely orienting himself to the weapon's characteristics. This can easily be accomplished in two hours of trial flight firing. It is not recommended that an inexperienced gunship pilot be initially trained in mini guns, as the action is too fast to permit a person to grasp fundamentals. Crew training presents no problems, as the crew duties are similar to those of any other system.

c. Maintenance: Although forewarned by the mini gun's reputation for erratic performance, the 281st found the weapon to be extremely reliable. Of four major stoppages that occurred, two were caused by a cartridge-jammed feed motor, one by shorted electrical connection, and one by a defective fuse in the power supply. But these stoppages were isolated incidents, normally the system could be depended upon to function properly. The routine care and cleaning of the weapon was aided immeasurably by the protective metal pod surrounding the mini gun. In the dustiest and wettest of conditions, the weapons remained relatively clean, and no malfunctions were attributable to dirt or rust.

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d. Target Effectiveness: The 281st found the mini gun system to be an extremely useful tool in its operations, if it was properly employed. After having employed the weapon in varied terrain, weather conditions and tactical situations, it was determined that the mini gun should be used much the same as rockets, that is for maximum firepower at from 1000 to 500 meters from the target, then silenced until the next attack. This permits the flex machine guns to take over at the mini gun's cessation, strike the target at a closer range, and cover the aircraft's outbound break. Although effective against a point target when fired by a skillful pilot, the mini gun is at its best when used on a small, soft area target where advantage is made by the weapons natural dispersion created by the aircraft's inherent vibrations in flight. On a prestrike of a landing zone, for instance, the weapon should be assigned a treeline or creekbed, rather than a specific hut or bunker. The minigun should be fired one gun at a time in bursts of five to seven seconds. Longer bursts result in gunner fatigue, excessive noise and inaccuracy. In addition, using short bursts enables both pilots to time ammunition expenditures so that both the flex and mini gun systems are exhausted simultaneously, keeping the systems integrated. The major drawback to the mini gun system comes in a "rearm and return" situation where the excessive time needed to reload the weapon becomes apparent. In an urgent situation, the M3 and M5 systems can be loaded very rapidly, the M16 system can be loaded in flight, but at best, the mini gun requires at least 20 minutes of lost ground time.

e. Conclusion: In skillful hands, the minigun can be a positive aid in any target attack. It should not be considered the primary offensive and destructive weapon in the armed helicopter team, but rather a supplement to the 2.75 inch rockets. It will give the team great flexibility, and is the ideal weapon for a quick, accurate and dependable boost to a gunship teams firepower.

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(USE REVERSE FOR TRANSPORT MISSIONS)

(USE REVERSE FOR TRANSPORT MISSIONS)									
DATE		AIRPLANE TYPE		FROM		HOME STATION		PILOT	
31 Jan 67		M-10 (540)				A-1210			
MISSION/TRIP/FLIGHT/NO.		SERIAL NO.		TO					
S-1-P-1		65-7476							
REMARKS		REF		ITEM		WEIGHT		INDEX OR MOM	
		1		BASIC AIRPLANE (From Chart C)		5101.5		7109.2	
		2		OIL (12 Gal.)		23.0		16.0	
		3		DISTRIBUTION OF LOAD					
		COMPT.		CREW		BAGGAGE		CARGO AND MISC.	
				NO.		WEIGHT			
		A		2		100		1000.0	
		B		2		100		1000.0	
		C						2-40	
		D						1-700lb	
E						1-1000lb			
F						2-40			
G						1-1000lb			
H						2-40			
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